Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington DC 20554

In the Matter of Biennial Regulatory Review – Amendments of Parts 1, 22, 24, 27 and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services	WT Docket No. 03-264

COMMENTS OF MOTOROLA, INC. TO THE FURTHER NOTICE OF PROPOSED RULE MAKING

Motorola, Inc. (Motorola) hereby submits these comments in response to the FCC's *Further Notice of Proposed Rule Making* in the above-captioned proceeding that is intended to eliminate or modify rules that treat wireless radio service licensees differently, or that have become outdated as a result of technological change, supervening changes to related Commission rules or increased competition.[1] In this phase of the proceeding, the FCC seeks comments on proposals to modify the radiated power limits for broadband PCS services and, potentially, other commercial services regulated under Parts 22 and 27 of the Commission's Rules.[2]

Earlier in this proceeding, the Commission eliminated the transmitter output power limits for broadband PCS systems while leaving intact the maximum EIRP limitations described in Section 24.232 of the Commission's rules.[3] The *Further Notice* now seeks comment on a proposal submitted by CTIA to revise the PCS radiated power

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1 *In the Matter of Biennial Regulatory Review – Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services*, Report And Order And Further Notice of Proposed Rule Making, WT Docket No. 03-264, FCC 05-144, 70 Fed. Reg. 60770 (2005) ("*Further Notice*").

2 *Further Notice* ¶ 49.

3 *Id.* at ¶ 21.

rules to limit average EIRP for broadband PCS stations having an antenna height of up to 300 meters above average terrain to the larger of: (1) 1640 Watts per carrier (3280 Watts in rural areas) which is the current rule, and (2) 3280 Watts per MHz of emission bandwidth (6560 Watts per MHz of emission bandwidth in rural areas).[4] For stations using an antenna height greater than 300 meters above average terrain, CTIA proposes that the "per MHz" limit be set to 1640 rather than 3280 Watts.[5] Further, the power spectral density aspect of this proposal would be applicable to stations transmitting emissions with a bandwidth wider than 500 kHz – narrow emission bandwidth stations would continue to remain subject to the existing fixed radiated power limits.[6]

In previously filed comments in this proceeding, Motorola indicated its support for basing limits on radiated power as a function of bandwidth, noting that the current rules are biased against wider bandwidth technologies as they allow technologies that utilize a narrower bandwidth to radiate a higher power per unit bandwidth.[7] Motorola previously explained that this places wider bandwidth systems at a competitive disadvantage because licensees of such technologies will need to deploy additional infrastructure to maintain the same coverage area as narrower bandwidth technologies.[8] In Motorola's view, the CTIA recommended rule change remedies this deficiency in the simplest, most straightforward manner possible. Motorola therefore urges the Commission to modify the Broadband PCS and Part 27 Advanced Wireless Service rules

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4 *Id.* at ¶ 51.

5 *Id.*

6 *Id.*

7 Comments of Motorola, Inc., WT Docket No. 03-264, April 23, 2004, at 2-3.

8 *Id.*

accordingly in order to permit stations in these two services with bandwidths greater than 500 kHz to operate within maximum limits of 3280 watts/MHz in non-rural areas and 6560 watts/MHz in rural areas. Such changes will increase licensee flexibility and promote technology neutrality. While Motorola previously recommended that the power spectral density formula be applied to emissions exceeding 1 MHz, CTIA's recommendation to allow this flexibility for bandwidths greater than 500 kHz is equally acceptable.

Motorola strongly prefers CTIA's recommended approach as opposed to the alternatives discussed in the *Further Notice* to simply establish higher fixed power limitations for wider bandwidth transmissions.[9] Motorola believes that the concern raised in the *Further Notice* that the CTIA approach might be confusing to licensees is overstated and, in any event, does not supercede the importance of developing a technology neutral approach. Establishing fixed "stepped" EIRP maximums would, inevitably, handicap some future technology designs with bandwidths on the "wrong-side" of the demarcation lines. Motorola believes that a power spectral density ("watts/MHz") approach will be easily understood by licensees and easily enforceable and measurable if need be. For these reasons, Motorola supports adoption of the sliding watts/MHz scale approach proposed by CTIA.

[9] *Further Notice* at ¶ 62.

Motorola also strongly supports the proposal to specify the EIRP radiated limits by considering average output power as opposed to peak values.[10] The specification of a peak value without a statistical probability yield results that are difficult to repeat due to measurement uncertainty. Further, the measurement of average values with non-constant envelope technologies avoids the possibility that impulse-like transient surges of extremely short-durations will unnecessarily govern the operating power of such stations. This average output power approach is consistent with most standards specifications.[11] These specifications are used to determine interoperability between various technologies to ensure co-existence, specification in a similar manner in the FCC rules for the radiated power level will bring the rules in-line with industry practices.

At this time, Motorola believes that the FCC should limit the applicability of these rule changes to the Part 24 Broadband PCS service and the Part 27 Advanced Wireless Services. More specifically, Motorola recommends that the Commission defer implementing similar rule changes in either the 800 MHz cellular band or the 2500 Broadband Radio Service (BRS) and Educational Broadband Service (EBS) band. Frequencies immediately adjacent to the 800 MHz cellular band and the 2500 MHz BRS/EBS band itself will be undergoing significant restructuring over the next several years and will support a mixture of technologies and services over that time. Motorola believes that the power spectral density approach has not been fully considered during the

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10 *Id.* at ¶68-70.

11 *See e.g.,* 3GPP TS 05.05 V8.20, "3rd Generation Partnership Project; Technical Specification Group GSM/EDGE Radio Access Network; Radio transmission and reception (Release 1999)", November 2005. 3GPP2 C.S0010-C V1.0 "Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations", 14 January 2005.

planning stages of such mixed operational environments. Therefore, Motorola recommends that the consideration of adopting these rule changes for those services be deferred pending further study or until the restructuring of the two frequency bands is complete or near complete and the impact of additional changes can be more accurately assessed.

Motorola supports the proposal from Crown Castle to apply the power spectral density approach to the 1670-1675 MHz band with the starting point of 2000 watts EIRP.[12] Motorola also supports Crown Castle's recommendation that the 1670-1675 MHz band be allowed to increase power levels in rural areas in a similar fashion to Broadband PCS and AWS services.[13] As noted by Crown Castle, the same rationale for allowing increased base station power for PCS and AWS operations equally applies to 1670-1675 MHz operations.

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12 *Further Notice* at ¶ 54.

13 *Id*. *See also,* Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services, WT Docket No. 02-381, *Report and Order and Further Notice of Proposed Rulemaking,* 19 FCC Rcd 19078 (2004).

The public interest is served by FCC rules that are technically harmonized and technology neutral. Motorola commends the Commission for its continuing efforts to update and improve its rules and urges it to act expeditiously to implement the changes recommended herein.

Respectfully submitted,
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